DOCKET FILE COPY ORIGINAL

August 20, 1998

Dear Commissioners and Commission staff:

I am enclosing the ORIGINAL of my Reply Comments in DOCKET MM 98-35.

I have had photocopying problems with the nine copies, but I will send them along tomorrow by Federal Express.

I apologize for the delay.

Sincerely,

Don Schellhardt

Don Schellhardt

DOCKET FILE COPY ORIGINAL

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REPLY COMMENTS OF DON SCHELLHARDT, ONE OF THE RM-9208 PETITIONERS

**RE: FCC DOCKET NO. MM 98-35**

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**DON SCHELLHARDT**
**Biennial Review Reply Comments**
August 3, 1998
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UNITED STATES OF AMERICA

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C.

| | | |
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| 1998 Biennial Regulatory Review of the Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant To Section 202 of the Telecommunications Act of 1996 | ) | MM Docket No. 98-35 |

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REPLY COMMENTS OF DON SCHELLHARDT, ONE OF THE PETITIONERS IN FCC DOCKET NO. RM-9208

## Information About The Commenter

I, the undersigned, am a writer and an attorney with extensive experience in the world of government policy. I have worked for all three branches of government: legislative (a Congressional Committee and a Member of Congress), executive (the U.S. Environmental Protection Agency) and judicial (court administration in Connecticut). I have also been an advocate before all three branches of government: legislative and executive (during 12 years with the American Gas Association) and judicial (helping clients of Connecticut Legal Services).

The Congressional experience includes work as an advisor to a member of the House Commerce Committee, which has jurisdiction over the Commission. Government regulation of business in general, and of utilities in particular, has been a strong and consistent theme throughout most of my career.

As a source of additional information for the record, a copy of my resume is attached to these Reply Comments.

I am also one of the authors of the Petition For Rulemaking which triggered the current proceedings, regarding possible re-legalization of microradio, in RM-9208. My fellow RM-9208 Petitioners were Nickolaus Leggett and Judith Fielder Leggett.

The Leggetts and I have also worked together in RM-5528. That Docket was opened in response to our Petition for A Notice of Inquiry on possible shielding of electronic equipment against the effects of Electromagnetic Pulse (EMP) -- which is a possible terrorist weapon of considerable power.

So far, the RM-9208 proceedings have involved solicitation and review of public comments on whether microradio, at levels of 100 watts or less, should be made legal again -- and, if so, how the new microradio regulations should be structured.

Hopefully, the Commission's next step will be a Notice of Proposed Rulemaking which proposes microradio re-legalization.

## Endorsement of Comments Filed By Americans for Radio Diversity

Through these Reply Comments, I endorse, in toto, the Written Comments, in MM 98-35, of Americans for Radio Diversity (ARD). I associate myself with their remarks.

I also urge the Commission to pay particular attention to ARD's research on the legislative history of the 1996 Telecommunications Act. This research suggests strongly that most Americans, and indeed most Congressional legislators,

were unaware of the provisions of the 1996 Act at the time of its adoption. This suggests in turn that most Americans, and most Congressional legislators, have never thought much about the Telecommunications Act of 1996 -- and, therefore, have no particular attachment to its provisions.

I expect that, in most cases, both voters and legislators will be open-minded regarding proposals to "reform the reform" of 1996 -- including abundantly justified efforts to repeal the mandatory auctions language completely.

## Incorporation By Reference of Certain Docket RM-9208 Filings

I hereby incorporate by reference all of the filings made by the RM-9208 Petitioners (Nickolaus Leggett, Judith Fielder Leggett and myself) in RM-9208. These filings include a Request for Extension of the Public Comment Deadline (which was granted by the Commission); Written Comments; Special Comments, Requesting A Suspension of Microbroadcasting Prosecutions With the Possibility of Retroactive Amnesty; Reply Comments; and two separate Additional Reply Comments.

These filings are focused primarily on the radio industry in general and microradio in particular. Still, the basic focus is set in a much broader context, including Constitutional law, history and the merits of capitalism that is sensibly, flexibly regulated versus capitalism that is not regulated at all.

With respect to these filings in RM-9208, I urge the Commission to pay special attention to three particular points:

(a) The Fourteenth Amendment and Microradio. It is asserted, in both the Special Comments and the Reply Comments of the RM-9208 Petitioners, that the banning of microradio violates the Fourteenth Amendment to the U.S. Constitution: "equal protection of the laws".

Certain other critics of the current microradio ban have stressed their view that the microradio ban violates the First Amendment to the U.S. Constitution: "freedom of speech". Without endorsing or rejecting this assertion by others, the RM-9208 Petitioners have concluded that the Fourteenth Amendment assertion is more likely to prevail in court than the First Amendment assertion.

For one thing, a Fourteenth Amendment claim does not require the U.S. Supreme Court to overturn its decision in the Red Lion case. This relatively recent Red Lion precedent, which firmly rejected a First Amendment claim, is simply not relevant to a Fourteenth Amendment claim.

Also, as a closely related point, proving a Fourteenth Amendment claim, in the specific context of radio broadcasting, requires less evidence than proving a First Amendment claim. So far, court decisions on radio-related First Amendment claims have justified some govenment regulation of speech by citing

spectrum scarcity. These precedents make it difficult to launch a vigorous First Amendment attack on the microradio ban without arguing, in some fashion or another, that the broadcasting spectrum is actually abundant (and/or has become so since the Red Lion decision was made). This is naturally very difficult to prove, being that it flies in the face of all the evidence. The spectrum is, in fact, demonstrably crowded in the nation's large metropolitan areas and could become crowded anywhere else. The basic fact of life is this: Any resource where the supply is fixed -- "inelastic", as the economists would say, and unable to expand at any price -- is always going to be scarce or potentially subject to scarcity. Period.

By contrast, a Fourteenth Amendment claim does not require advocates to ignore, or tiptoe around, common sense observations that are as plainly obvious as the proverbial "elephant in the living room". Elaborate contortions of law, logic and/or economics are not required in order to make the case.

With a Fourteenth Amendment claim, all that is necessary is a showing that action(s) by government -- in this case, the current ban on microradio -- discriminate on the basis of race, creed, ethnicity, gender or class WITHOUT having a compelling reason to do so.

Unlike the assertion of spectrum scarcity, the assertion of unjustified class discrimination is evident on its face.

To phrase the same point from the Commission's perspective:

If America's courts were asked -- through a request for a permanent injunction against microradio prosecutions, or a lawsuit asserting inaction or inadequate action in the pending microradio re-legalization Dockets, or a challenge filed by a rejected station license applicant, and/or other legal action -- to decide whether the current microradio ban violates the First Amendment to the U.S. Constitution, the Commission could build a solid "first line of defense" by laying out the facts regarding the physical "inelasticity" of the resource (at least with present technology) and the current competition for spectrum in America's large metropolitan areas.

However, if the same court(s) were asked to decide whether it violates the Fourteenth Amendment to exclude more than 99 percent of the American people from the public airwaves, the Commission could only defend itself by stating a reason for rampant class discrimination. This reason would have to be:

(1) **"Compelling"**

and

(2) Grounded in "the **public** interest"
(Meaning: The interests of The People)

Court decisions clearly require that both of these tests must be met to justify discriminatory action(s) by government.

This would not be a simple task, given the facts at hand.

If the Commission cannot articulate a Constitutionally suitable reason for denying affordable airwave access to microstations, and for denying this access by force of law, then the Commission should act as rapidly as it reasonably can to replace its total ban on microstations with policies for reasonable regulation of licensed microstations.

(b) The Fourteenth Amendment and Mandatory Auctions for Station Licenses. The same factors which make the ban on microradio unconstitutional, under the provisions of the Fourteenth Amendment, also render unconstitutional the recent statutory mandate for use of auctions in awarding commercial radio station licenses.

The net effect of both policies is the same: total domination of the radio airwaves by the richest and most powerful among the richest and most powerful.

Indeed, to some extent, the policies reinforce each other.

The legally enforced ban on competition from microstations permits owners-by-auction to inflate advertising rates, which in turn permits them to inflate revenues per station, which in turn inflates the level of bidding required for licensing or acquiring a station, which in turn propels the minimum financial threshold for "market entry" even higher into the peak of the socio-economic pyramid.

At the same time, the statutory mandate for auctions has allowed the largest broadcasters to consolidate control of conventional radio and provided a "backup" option for protection from microstations if microradio is made legal once again. Specifically, the auction mechanism -- unless it is waived for the micromarket, or offset by stringent restrictions on who can bid in the micromarket, or (preferably!) both -- could easily allow the largest broadcasters to turn some or all of the microstations into mere outposts of the megacorporate empires. Thus, the largest broadcasters would remain at least partly protected from microradio competition.

Of course, microstation owners who are willing and able to do so could gain insulation from the auction process by opting for non-commercial licenses. This "escape hatch", though, would still leave the megacorporate broadcasters with at least "half a loaf". They would still face programming competition from the non-commercial microstations, which might well lead to some erosion of their market shares, but they would be free from competition with such stations in the crucial area of advertising rates and revenues.

In short, the current microradio ban and the current auctions mandate work together to cement domination of the radio industry by a small fraction of the corporate community and a tiny fraction of the American people.

Both policies deny "equal protection of the laws" to the vast majority of individuals and corporations in America.

Both policies should be brought to an end -- with maximum reasonable speed.

(c) Report(s) To Congress. The cited Constitutional claims are now firmly on the record in RM-9208 and MM 98-35. These claims may be accepted or rejected -- but not ignored.

To its great credit, the Commission is already acting to lift the microradio ban. Ending the statutory mandate for auctions will, however, require action by Congress. The Biennial Review presents the Commission with a particularly promising opportunity to urge such action by Congress.

At the very least, the Commission should apprise Congress of the powerful legal and policy arguments which have been made against both the microradio ban and the mandated auctions. The Commission should make sure Congress understands that a Fourteenth Amendment argument has been made against both of these policies -- while the First Amendment has been cited by some as a separate grounds for voiding the microradio ban.

This is, literally, the least the Commission can do.

Ideally, the Commission, following its own analysis of the legal assertions, should report to Congress that both policies are indeed unconstitutional under the Fourteenth Amendment. The Commission should then call for immediate

repeal of the auctions mandate, adding that it will no longer enforce this mandate unless it is ordered to do so by a court.

As a mid-range option, the Commission could:

1. Apprise the U.S. Congress that serious Constitutional claims have been made against both the ban on microradio and the statutory mandate for license auctions. The Commission might add that the Fourteenth Amendment argument could also be used against the recent legislative loosening of market share limitations on station ownership.

2. Inform Congress that the Commission is already acting on its own initiative to address microradio re-legalization: an act which does not require prior Congressional authorization.

3. Inform Congress that the Commission intends to issue a Notice of Proposed Rulemaking on microradio re-legalization.

4. Apprise Congress that, as requested by the RM-9208 Petitioners, the Commission will include in its microradio NOPR an explicit solicitation of case law and/or comments on: (i) whether the current ban on microradio is unconstitutional; and (ii) whether the legal mandate for auctions is unconstitutional.

5. Promise to apprise Congress of its findings.

6. Alert Congress that license auctions, whether constitutional or not, were not designed with microradio in mind. Auctions can quickly and easily erode some or all of the unique benefits that microradio offers to the public.

7. In light of the above: Urge Congress, while it waits for official Commission findings on the constitutionality of license auctions in general, to expand the statutory auctions exemption for all non-commercial radio stations of any wattage. The expanded auctions exemption should also cover: (i) all commercial radio stations which broadcast at 100 watts or less; plus (ii) all non-profit radio stations which broadcast at 100 watts or less and sell commercial air time to offset some or all of their expenses.

As for point (ii): The same effect can also be achieved by making certain that the definition of "non-commercial" clearly encompasses non-profit radio stations which air commercials as a source of subsidies for their operations.

## Constitutional Issues Posed By Excessive Commission Reliance on the Internet

The Internet is, in most ways, a blessing to our nation and our planet. Its use and acceptance have been rising rapidly -- and, by all indications, will continue to do so.

Therefore, it is both progressive and practical for the Commission to post public documents on the Internet, to accept electronic filings of written comments, to accept electronic filings of license applications and so on.

Problems arise when these options become requirements.

For example, when public documents are only posted on the Internet, and/or when license applications may only be filed electronically, then crucial corners of the federal government can be sealed to entry for anyone without the financial means to make an electronic connection.

See Chart I for some recent Commerce Department statistics on PC use and Internet capability, broken down by certain major racial subgroups. The numbers clearly show that a Universal Licensing system which requires Internet use would automatically exclude a substantial majority of the American people in general -- and a significantly larger majority of blacks and Hispanics.

It is difficult to understand how a process which automatically excludes the majority of the American people, and which (according to Chart I) excludes blacks and Hispanics at 2 to 3 times the rate for whites, is a solid example of "equal protection of the laws". The Fourteenth Amendment to the United States Constitution requires a much more open system for allowing citizens access to their federal government.

Similarly, when "real audio" on the Internet is touted as a feasible alternative to re-legalized microradio, the Commission should heed the Commerce Department findings that:

1. Barely a third of all Americans own a personal computer.

2. Barely a quarter of all Americans have a personal computer and a modem (that is, have Internet capability).

# CHART I :
# PERSONAL COMPUTER USE,
# AND INTERNET CAPABILITY,
# BROKEN DOWN BY
# CERTAIN MAJOR RACIAL SUBGROUPS

This Chart is based on figures provided in an article by David Plotnikoff of Knight Ridder Newspapers. The article appeared (among other places) on page 6A of the August 2, 1998 WATERBURY REPUBLICAN-AMERICAN (based in Waterbury, CT). That paper's headline for the story was "Study: Home computer use divided along racial lines".

The numbers in the article are drawn directly from a July 1998 study by the National Telecommunications and Information Administration of the Department of Commerce. The federal study is entitled "Falling Through The Net: New Data on the Digital Divide".

(Figures rounded)

## PC OWNERSHIP

| | | |
|---|---|---|
| Whites | 41% | (2.1 times the rate for Hispanics & blacks) |
| NATIONAL AVERAGE | 37% | |
| Hispanics | 19% | |
| Blacks | 19% | |

## OWNERSHIP OF PCs WITH MODEMS (that is, INTERNET CAPABILITY)

| | | |
|---|---|---|
| NATIONAL AVERAGE | 26% ** | |
| Whites | 21% | (2.4-2.8 times the rate for Hispanics & blacks) |
| Hispanics | 9% | |
| Blacks | 8% | |

** The article gave no reason why this national average number is higher than the average for any of the racial subgroups. Perhaps Asian-Americans, and/or other racial subgroups not mentioned here, are pulling up the average for Internet capability.

**Don Schellhardt**
Biennial Review Reply Comments
August 11, 1998

3. Only an unknown fraction of those with Internet capability can also claim "real audio" capability.

In short: The Net is great, but the airwaves still rule.

For now, and for at least the foreseeable future, the airwaves remain America's primary "public square". Excluding everyday Americans from the airwaves is a sentence to silence for most of them.

At a minimum, the Commission should:

(i) Allow exemptions from any electronic filings mandate, under any Universal Licensing framework, for microstations, amateur radio ("ham") operators and any other parties who lack the "deep pockets" of a large to medium-sized institution.

(ii) End the practice of posting some public documents only on the Internet. Communicating news about FCC rules, proposed rules, Notices of Inquiry, decisions and so on should be a multimedia effort -- aimed at reaching both the Commission's "core constituencies" and the American people.

(iii) Keep the electronic filing of comments a choice.

(iv) Renegotiate the Commission's subcontract for photocopying of Commission documents, in order to greatly reduce current fees, and/or establish an accessible and convenient exemption from the fees for individuals who are not backed by large institutions. Charging private citizens over $50.00 for the 11-page RM-9208 Petition was ridiculous.

Incorporation By Reference of the Benjamin/Colpien Filing

Some of the points which have been raised above, and also during the ongoing deliberations in RM-9208, have been raised by others besides the Leggetts and myself. In particular, I commend to the Commission's attention the Reply Comments of John Robert Benjamin and Charles Coplien in RM-9208.

These Reply Comments include a restatement of the Fourteenth Amendment arguments against the microradio ban and mandatory auctions. Other interesting arguments are also included.

I hereby incorporate by reference these RM-9208 Reply Comments of John Robert Benjamin and Charles Coplien.

Implied NAB Acceptance of 10 Watt Microstations

The Commission should be aware that the National Association of Broadcasters (NAB) has recently "dropped a hint" that it might be able to live with microstations which broadcast at 10 watts or less.

The remarks in question can be found on pages 6 and 7 of the NAB's Reply Comments in RM-9208, RM-9242 and RM-9246.

Here is the text in question (with emphasis added):

Other proponents (of microradio) request that the FCC re-institute Class D FM station authorizations. (10 watt educational stations) As noted above, for the majority of proponents, 10 watts would not be adequate in their view. Nonetheless, with regard to <u>any other</u>, actual low power station proposals, we reiterate here the statement we made in our comments: the Commission has reasonably determined that operations below 100 watts are inefficient and wasteful use of spectrum.

These words <u>may</u> be a subtle signal that the NAB, for the first time, is willing to consider a compromise.

Consider the words carefully.

<u>First</u>, the acceptance of 10 watt educational stations is indirect but discernible. The NAB acknowledges the efforts to re-legalize 10 watt educational stations and then <u>does not criticize</u> such efforts. In a different context, this silence might be meaningless -- but here the NAB's guns fall silent within a context where every other microradio proposal is a target. In this case, at least, silence may truly be consent.

<u>Second</u>, the NAB adds more evidence for this interpretation by immediately referencing its opposition to <u>every other</u> microradio proposal <u>except</u> the 10 watt educational stations.

Having just declined to criticize the 10 watt educational stations, the NAB says this: "Nonetheless, with regard to <u>any other</u>, actual low power station proposals, we reiterate here" the NAB's traditional position of strong opposition. (Emphasis supplied)

Thus, the NAB is opposing "any other" microradio proposal -- and is stating this opposition after the word "Nonetheless", which implies a shift in policy and/or attitude as the NAB moves from one item to the other. Presumably, then, the NAB is not opposing a proposal which falls outside the "any other" category.

**Third**, although the "signal" is again rather indirect, the NAB implies that the power level of 10 watts is what makes re-legalized educational stations acceptable (or at least tolerable) to the NAB.

"Other proponents request that the FCC re-institute Class D FM station authorizations," the NAB reports. "As noted above, for the majority of proponents, 10 watts would not be adequate in their view."

This raises the obvious question: If 10 watts were "adequate" in the view of most microradio supporters, would the NAB be willing to accept 10 watt microstations?

And, if 10 watt educational stations fall below the NAB's threshold of unacceptable pain, why not commercial microstations as well? After all, a 10 watt radio signal has the same physical characteristics, and the same potential for interference, whether the station operator is a student or an entrepreneur. There is no technological difference.

Perhaps the NAB is finally thinking of compromise --

with 10 watts as an opening bid.

Speaking only for myself, and not necessarily for the microradio community as a whole, I am more than willing to negotiate with the NAB -- or anyone else! -- if negotiations are held in good faith and if the legitimate interests of all legitimate parties can be brought to the bargaining table.

As for the NAB's possible "opening bid" of 10 watts, Chart II shows the potential residential audience for a 10 watt microstation at varying levels of population density (from Washington, DC to the mountains and deserts of Utah).

The Chart strongly suggests that 10 watt microstations may well be financially sustainable -- if they are based in the core city or "close in" suburbs of a reasonably large metropolitan area.

Assuming the NAB is seriously considering a compromise at 10 watts, the bad news for them is this: Full time, profit-seeking microstations may not be financially sustainable at 10 watts in small cities, outer suburbs or rural areas. Even some non-profits and non-commercials may not be viable. The good news for them is this: Large cities and inner suburbs, where average population density exceeds a few thousand people per square mile and 10 watt stations MAY be viable, are the very areas where established broadcasters have the most to lose from new stations operating at more than 10 watts.

Chart III presents some raw data on possible audience size.

Chart IV outlines, without proposing, one possible way to pursue (relatively) uniform audience size rather than uniform microstation wattage. Chart V presents, without proposing, another possible range of targeted microradio audience size.

All four of these Charts underscore, in different ways, the importance of adjusting power ceilings to take population density into account. As Chart III indicates, a 1 watt station with a 50 foot tower in downtown Washington covers barely a square mile but has a potential residential audience of 11,000 (plus commuters). At 10 watts and 50 feet, covering less than 5 square miles, the potential audience is 45,000 (and commuters). Yet a 100 watt microstation with a 328 foot tower, covering 129 square miles in a demographically average part of Utah, has a potential residential audience of only 3,000 (supplemented, in all likelihood, by few if any commuters).

Eight states have a lower population density than Utah.

Flexible wattage cannot compensate for all of this varied geography, but (as Charts IV and V indicate) power ceilings can be used to bring the majority of American microstations into (or close to) a targeted range of desired audience size. In these Charts, audiences falling outside the target ranges were 100 watt rural stations whose audiences were too small -- not 10 watt urban stations whose audiences were too large.

## CHART II:
## THE INTERACTION OF WATTAGE AND POPULATION

This Chart shows how the residential audience for a radio station can vary dramatically with population density -- even as power levels are held constant at **10 watts.**

10 watts was selected because the National Association of Broadcasters (NAB) has recently IMPLIED it does not oppose re-legalization of 10 watt educational stations -- which, in turn, IMPLIES it might tolerate OTHER 10 watt stations. These remarks are on pages 6-7 of the NAB Reply Comments in Dockets RM-9208, RM-9242 and RM-9246.

The calculations are based in part on Rodger Skinner's transmission radius data on page 38 of his Reply Comments in RM-9242. Assumed zoning limits on towers are: (a) 50 ft. where density >3,000 people/square mile; (b) 100 ft. where density is 500-3,000 people/square mile; AND (c) 328 ft. where density is 500 people/square mile or less.

**This Chart strongly suggests** that 10-watt microstations MAY WELL have enough of a potential audience to be economically sustainable -- IF they are based in the core city or "close in" suburbs of a reasonably large metropolitan area. For smaller cities, outer suburbs and countryside, however, higher power levels would seem advisable.

**(Figures Rounded to the Nearest 1,000)**

| **HUMAN POPULATION DENSITY** | **EST. POTENTIAL RESIDENTIAL AUDIENCE AT 10 WATTS:** | | |
|---|---|---|---|
| | **50 feet** | **100 feet** | **328 feet** |
| 10,000 people per square mile (Just over the average for Washington, DC) | 45,000 | ---- | ---- |
| 5,000 people per square mile (Approximate average for Arlington, VA) | 23,000 | ---- | ---- |
| 3,000 people per square mile (Approximate average for Washington, DC AREA AS A WHOLE) | 14,000 | 46,000 | ---- |
| 1,000 people per square mile (Approximate average for Great Falls, VA) | 5,000 | 15,000 | ---- |
| 150 people per square mile (Approximate average for VA AS A WHOLE) | <1,000 | 2,000 | 8,000 |
| 20 people per square mile (Approximate average for UTAH AS A WHOLE: (8 OTHER states have a LOWER average) | <1,000 | <1,000 | 1,000 |

**Don Schellhardt**
Biennial Review Reply Comments
August 11, 1998

## CHART III:
## RAW DATA ON WATTAGE/POPULATION INTERACTION

This Chart presents raw data on which Charts II, IV & V are based. Transmission radius data, at various power levels, are from page 38 of Rodger Skinner's Reply Comments in RM-9242. EXCEPTION: Transmission radii for 10 watt microstations were calculated by Don Schellhardt, based on information provided by microbroadcasters at a microradio Web site. Don Schellhardt also calculated ALL data other than the transmission radii.

**POTENTIAL AUDIENCE:** TRANSMISSION RADIUS (mi.) times itself (i.e., SQUARED) times 3.14 (i.e., PI) is **COVERAGE AREA (CA).** Then CA times people/square mile.

**(Figures rounded to the nearest 1,000)**

| **HUMAN POPULATION DENSITY** | **POTENTIAL RESIDENTIAL AUDIENCE AT:** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **1 w/ 50'** | **10w/ 50'** | **1w/ 100'** | **10w/ 100'** | **100w/ 100'** | **1w/ 328'** | **10w/ 328'** | **100w/ 328'** |
| **CA (in sq. mi.)** | **1.1** | **4.5** | **3.8** | **15.2** | **38.5** | **12.6** | **50.2** | **128.6** |
| 10,000/sq. mi. (Wash., DC) | **11,000** N | **45,000** C | **38,000** C | 152,000 | 385,000 | 126,000 | 502,000 | 1,286,000 |
| 5,000/sq mi (Arlington, VA) | **6,000** N | **23,000** C | **19,000** C | **76,000** C | 193,000 | 63,000 | 251,000 | 642,000 |
| 1,000/sq.mi. (Great Falls, VA) | 1,000 | **5,000** N | **4,000** N | **15,000** C | **38,000** C | **13,000** C | **50,000** C | 129,000 |
| 100/sq. mi. (USA Average: Lower 48) | <1,000 | <1,000 | <1,000 | **2,000** N | **4,000** N | 1,000 | **5,000** N | **13,000** N |
| 20/sq, mi. (UTAH: 8 states lower) | <1,000 | <1,000 | <1,000 | <1,000 | 1,000 | <1,000 | 1,000 | **3,000*** N |

* With **250 watts** and 328 feet, CA is 206 sq.mi. Potential Utah audience is **4,000.**

Stations in **bold** are small enough to be locally oriented and MAY BE large enough to be financially viable. The target ranges for the Two Tiers are intended to be illustrative, NOT definitive: **N=** Neighborhood sized: 2,000-15,000. (May be non-profit in most cases, but may sell air time to cover costs.) **C=** Community sized: 15,000-100,000.

**Don Schellhardt**
Biennial Review Reply Comments
August 12, 1998

## CHART IV:
## "TWO TIERED" APPROACH TO OPTIMIZING AUDIENCE SIZE RANGES

Chart IV demonstrates how a combination of wattage and population density can be used to keep microradio audience sizes within a desired range. The idea is to vary the wattage (and, where possible, the tower height) to hold the audience size fairly constant. This Chart is based in part on transmission radius data presented by Rodger Skinner on page 38 of his Reply Comments in RM-9242. See Chart III for more on methodology.

**This approach is an option for FCC consideration, NOT a proposal.** Also, it reflects the thoughts of Don Schellhardt, not necessarily those of the other RM-9208 Petitioners. **The "Two Tiered" System,** set forth in the RM-9208 Petitioners' Reply Comments in RM-9208, **is the framework for pursuing this particular option.** This system seeks to optimize microradio diversity by creating two classes: Tier One (Neighborhood Stations, with 1-mile transmission radii) AND Tier Two (Community Stations, with 5-mile transmission radii) PLUS "elastic" power ceilings in low population areas. **Chart IV shifts to wattage based on local demand for spectrum.**

**Please note TWO KEY FEATURES of this option:**

**(1)** It attempts to use the size of the potential residential audience as a quantifiable "proxy" for estimating microstation viability. For this exercise, the target range of potential residential audience for **Neighborhood Stations = 2,000-15,000.** The comparable target range for **Community Stations = 15,000-100,000. These particular target ranges are intended to be illustrative -- NOT definitive.** Persons with radio marketing experience and/or expertise may be able to define more accurately the range of potential residential audience size within which: (a) microstations can be financially self-sustaining (and hopefully profitable); BUT (b) microstations will not be tempted by economic forces to abandon local focus and "niche" programming for regional focus and "mass market" programming. PLEASE BEAR IN MIND that even non-profit and/or non-commercial microstations are NOT totally immune to market forces. Non-profit microstations may still air commercials to offset some or all of their costs -- and non-commercial stations still need to heed audience demographics for fund raising.

**(2)** It holds microstations to 10 watts (a level which MAY be acceptable to the NAB) in areas of high population density -- where 10 watts may make sense. However, this option raises the wattage in areas where 10 watts is simply not viable. PLEASE OBSERVE that, in 42 of the 50 states, NEIGHBORHOOD STATIONS can reach minimum audience size (2,000) with a mix of: (a) 1 to10 watts in urban areas; and (b) 10 watts to 100 watts in less populated areas. HOWEVER, the corresponding power ceilings for COMMUNITY STATIONS (10 watts urban to 100 watts rural) allow minimum audience size (15,000) to be met in only 21of the 50 states. MAXIMUM audience size (100,000) is reachable in only in New York City.

**Spectrum use can be employed as a rough "proxy" for population density** if the FCC desires. For example, areas where human population density is >5,000/sq.mi. are ALSO likely to be areas where CLEAR signals occupy >90% of the available spectrum. Areas <50/sq. mi. often have <50% of the spectrum in use.